IN THE CLAIMS

Cancel claims 2, 6 and 14.

Amend the claims in the application to read as follows:

1. (Amended) A method that restores communication in a mesh network between a first end node and a second end node, comprising:

transmitting a communication signal over a first communication path comprising the first end node, the second end node and one or more first intermediate nodes;

detecting an error condition at at least one of the first end node and the second end node; and

rerouting the communication signal over a second communication path based on the detected error condition in order to restore communication, the second path having been determined before the error condition is detected and the second path including the first end node, the second end node, and one or more second intermediate nodes, wherein the second intermediate nodes are disjoint from the one or more first intermediate nodes;

the second path further including one or more transmission lines each having a plurality of channels, at least one said channel being assigned, after the error condition is detected, to carry the communication signal.

3. (Amended) The method of claim 1, further comprising sending one or more back-off commands to release at least one channel that had been assigned, after the error condition had been detected, to carry the communication signal.

4. (Amended) The method of claim 1, wherein the first and second end nodes coordinate rerouting the communication signal over the second path.

5. (Unchanged) The method of claim 1, wherein the mesh network is an optical mesh network.

7. (Amended) The method of claim 1, wherein the step of rerouting the communication signal includes

issuing commands, after the error condition is detected, in a direction from the first end node to at least one of the second intermediate nodes to bi-directionally assign channels in at least one of said transmission lines, and

issuing commands, after the error condition is detected, in a direction from the second end node to at least one of the second intermediate nodes to bi-directionally assign channels in at least one of said transmission lines.

8. (Amended) The method of claim 1, wherein the step of rerouting the communication signal includes:

responding to a failure indication sent from the first end node to the second end node by issuing commands from the second end node to the one or more second intermediate nodes to bi-directionally assign channels along the second path.

9. (Amended) The method of claim 1, wherein the step of rerouting the communication signal includes issuing commands from the first end node to the one or more second intermediate nodes to unidirectionally assign channels along the second path in a first direction.

10. (Amended) The method of claim 9, wherein the step of rerouting the communication signal further includes issuing commands from the second end node to the one or more second intermediate nodes to unidirectionally assign channels along the second path in a second direction.

11. (Unchanged) The method of claim 1, wherein the mesh network is a synchronous optical network (SONET) defined by the ANSI T1.105.

12. (Amended) The method of claim 1, wherein channels are assigned to carry the communication signal over the second path using a contention technique.

13. (Amended) A mesh network having a first end node and a second end node, comprising:

a first communication path that transmits a communication signal, the first communication path including the first end node, the second end node and one or more first intermediate nodes;

an error detecting device in at least one of the first end node and the second end node; and

a predetermined second communication path that is determined before the error detecting device detects an error condition and that transmits the communication signal after the error detecting device detects the error condition, the predetermined second path comprising the first end node, the second end node, and one or more second intermediate nodes, wherein the second intermediate nodes are disjoint from the one or more first intermediate nodes;

the second path further including one or more transmission lines each having a plurality of channels, and at least one said channel being assigned, after the error condition is detected, to carry the communication signal.

15. (Amended) The mesh network of claim 13, wherein the communication signal is rerouted from the first path to the second path based on an error condition detected by the error detecting device.

16. (Amended) The mesh network of claim 13, wherein the communication signal is rerouted from the first path to the second path based on a communication of the second end node.

17. (Amended) The mesh network of claim 13, wherein the first end node responds to an error condition by issuing commands to the one or more second

intermediate nodes to unidirectionally assign channels along the second path in a first direction.

18. (Amended) The mesh network of claim 17, wherein the second end node responds to the error condition by issuing commands to the one or more second intermediate nodes to unidirectionally assign channels along the second path in a second direction.

19. (Amended) The mesh network of claim 13, wherein the mesh network uses a synchronous optical network (SONET) defined by the ANSI T1.105.

20. (Amended) The mesh network of claim 13, wherein one or more channels of at least one of said transmission lines are assigned to carry the communication signal using a contention technique.

Add new claims 21-38 as follows:

21. (New) A method for rerouting communications between first and second nodes of a mesh network upon a failure in a first path between the first and second nodes, the method comprising rerouting the communications over a second path identified prior to said failure, the second path being node and span disjoint from the first path and the communications in the second path being carried over at least one assigned channel in at least one transmission line between at least one pair of nodes of the second path, said rerouting including assigning said at least one channel after said failure occurred.

22. (New) The method of claim 21 wherein said assigning further includes

assigning bi-directional channels in transmission lines of the second path in a direction from the first node toward the second node and concurrently assigning bi-directional channels in transmission lines of the second path in a direction from the second node toward the first node.

23. (New) The method of claim 21 wherein the mesh network is an optical network.

24. (New) The method of claim 21 wherein the mesh network is a synchronous optical network (SONET) defined by ANSI T1.105.

25. (New) A method for use in a mesh network comprising nodes interconnected by links, the method comprising

establishing a first communication path from a first node to a second node, the first communication path including ones of said links and at least one intermediate node;

directing communications traffic from the first end node to the second end node over the first path; and

responsive to a failure in the first path, rerouting the traffic to a second communication path that had been identified prior to said failure, the second path including ones of said links and at least one intermediate node, the second path being node and span disjoint from the first path, and the traffic over the second path being directed over at least one assigned channel within a multichannel link of the second path that was assigned subsequent to said failure.

26. (New) The method of claim 25 wherein said rerouting includes

assigning bi-directional channels in links of the second path in a direction from the first node toward the second node and concurrently assigning bi-directional channels in transmission lines of the second path in a direction from the second node toward the first node.

27. (New) The method of claim 25 wherein the mesh network is a synchronous optical network (SONET) defined by ANSI T1.105.

28. (New) A method for use in a mesh network comprising nodes interconnected by transmission lines, at least ones of the transmission lines being capable of carrying communication traffic in a plurality of channels, the method comprising

establishing a first communication path between a first node and a second node, the first communication path including ones of the transmission lines and at least one intermediate node;

directing communications traffic from the first end node to the second end node over assigned channels of the transmission lines in the first path; and

responsive to a failure in the first path, rerouting the traffic over assigned channels in the transmission lines of a second communication path between the first node and the second node, the second communication path having been identified prior to said failure, the second path having at least one intermediate node, the second path having no intermediate nodes or transmission lines in common with the first path, and at least one of the channels in the transmission lines of the second path being assigned subsequent to said failure.

29. (New) The method of claim 28 wherein said rerouting includes

assigning bi-directional channels in transmission lines of the second path in a direction from the first node toward the second node and concurrently assigning bi-directional channels in transmission lines of the second path in a direction from the second node toward the first node.

30. (New) The method of claim 28 wherein the mesh network is a synchronous optical network (SONET) defined by ANSI T1.105.

31. (New) A node for use as a first node in a mesh network of a type in which communications signals between said first node and a second node of said network over a first path through said network are rerouted over a second path through said network upon a failure in said first path, said second path having been identified prior to said failure, the second path being node and span disjoint from the

first path, said first node being arranged to initiate, after said failure in said first path, an assignment of channels, within links connecting pairs of nodes in the second path, to carry said communications signals.

32. (New) The invention of claim 31 wherein an identification of said second path is stored in said first node.

33. (New) The node of claim 32 wherein said assignment includes assigning bi-directional channels in links of the second path in a direction from said first node toward the second node irrespective of whether said second node has initiated concurrent assignment of bi-directional channels in links of the second path in a direction from the second node toward said first node.

34. (New) A method for use by a first node in a mesh network of a type in which communications signals between said first node and a second node of said network over a first path through said network are rerouted over a second path through said network upon a failure in said first path, said second path having been identified prior to said failure, the second path being node and span disjoint from the first path, said method comprising initiating, after said failure in said first path, the assignment of channels, within links connecting pairs of nodes in the second path, to carry said communications signals.

35. (New) The invention of claim 34 wherein an identification of said second path is stored in said first node.

36. (New) The node of claim 35 wherein said assignment includes assigning bi-directional channels in links of the second path in a direction from said first node toward the second node irrespective of whether said second node has initiated concurrent assignment of bi-directional channels in links of the second path in a direction from the second node toward said first node.